

# Operational Agility in Taiwan's Microelectronics and Information Industry

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This paper presents a study directed to the investigation of the agility of Taiwan's microelectronics and information industry. The paper addresses the business practices and indicators that reflect the rapid development and manufacturing capabilities as well as flexible management structures that support an agile organization in response to the rapidly changing environment.

Agility is the ability to thrive in an environment of continuous and often unanticipated changes through an enterprise geared toward reconfigured operations. Agile manufacturing addresses the flexible manufacturing capabilities, as well as business practices, engineering and support operations that require flexible management structures and a networked infrastructure capable of supporting "virtual corporations" and other agile organization that can respond to rapid changes. Many technology-based firms in Taiwan find the virtual enterprise concept and techniques highly applicable toward building up and sustaining competitiveness. These firms also find that their agility is profoundly affected by the interactions across functional network boundaries and the enactment of the core business processes plays a key role for the effective management of the virtual enterprise.

The survey of the perceived agility of Taiwan's internationally competitive integrated circuit (IC) and information industry confirms some conventional wisdom while rejecting others. The general notion that Taiwan's manufacture-oriented high-tech firms are highly mobile in

restructuring and realigning among themselves in the supply network to gain competitive advantage was upheld. The agility traits can be presented with twenty agile ability indices, and twenty-five agile enterprise characteristic indices. The study confirmed the conventional view of Taiwan IC and information product manufacturers' high level of maturity in capacity scaling, responsive to customer demands, product line change, and organization restructuring. It also shows the low maturity level of these firms in the areas of product modularization, part commonality, and human resource acquisition. The profile on agile ability and characteristics for IC industry are also consistent with the principal roles of specialization between manufacture and engineering-oriented firms.

The surprising findings that the firms surveyed perceived a high profile on application of information technology and valuation of knowledge and technology deserve further discussion. In contrast to the high profile of the above two indices, the indicators on information sharing with partners and intellectual property right management received low attention. It appears that, for the Taiwan technology-based industry, such as IC and information industry, the migration to knowledge-based enterprise has just started and not yet got solid footing; especially in the area of building capability-driven partnership and network in response to market opportunities.